

## ABSTRACT OF THE DISCLOSURE

Method and apparatus for supporting multi-function PCI devices in PCI bridges. Respective pre-fetch buffers are allocated in response to respective initial data transfer requests issued by a multi-function PCI device. A programmable buffer fill watermark is set up for each pre-fetch buffer. While a portion of data corresponding to the data transfer requests fill the pre-fetch buffers, the fill level of each buffer is monitored to determine if it meets or exceeds its buffer fill watermark. In response to such a condition, the multi-function PCI device is connected to the PCI bridge and a virtual buffer is mapped to the pre-fetch buffer. The pre-fetch buffer is then emptied. During subsequent data transfers, each of the pre-fetch buffer becomes filled, the PCI device is connected, and the virtual buffer is mapped to the filled buffer. The process is continued until all data corresponding to the original data transfer request is received by the multi-function PCI device.